

Claims

- 1 1. Multiband Radio System, comprising:
- a receiving branch (RX) and a transmitting branch (TX) respectively supporting more than one different frequency band,
characterized by
- 5 - a receiving/transmitting filter selector (RTFS) controlling radio frequency filters included within said receiving branch (RX) and said transmitting branch (TX), respectively, in receiving mode so that radio signals of a frequency band which are passed through in the receiving branch (RX) are blocked in the transmitting branch (TX).
- 10 2. Multiband Radio System according to claim 1, **characterized in that**
- each of said receiving and transmitting branches (RX, TX) comprises at least two radio frequency filters (RF1, RF2; TF1, TF2) which comprise passband and stop band functions, whereby within each of said receiving and transmitting
- 15 branches (RX, TX) said passband and stop band functions of each of said radio frequency filters (RF1, RF2; TF1, TF2) are responsible for reception/transmission of a given frequency band being different from respective frequency bands of each of the other radio frequency filters (RF1, RF2; TF1, TF2), and
 - in said receiving mode the receiving branch (RX) is switched into a state

20 for electrically connecting that radio frequency filter (RF1, RF2) being responsible for filtering radio signals of a first frequency band between into its RF path, and the transmitting branch (TX) is switched into a state for electrically connecting a respective other one of said radio frequency filters (TF1, TF2) being responsible for filtering radio signals of a second frequency band into its RF

25 path.

3. Multiband Radio System according to claim 1, **characterized in that**

 - within each of said receiving and transmitting branches (RX, TX) said radio frequency filters (RF1, RF2; TF1, TF2) are arranged in parallel and between

30 at least one pair of multiplexer switches (RSW1, RSW2; TSW1, TSW2),

 - said multiplexer switches (RSW1, RSW2; TSW1, TSW2) being actuated by means of a respective band selection signal,
 - said receiving/transmitting filter selector (RTFS) receives a receive/transmit control signal (RTCS) and a primary band selection signal (BSS), and
 - said receiving/transmitting filter selector (RTFS) outputting at least two

- 1 secondary band selection signals (BSS1, BSS2) being inputted to each of said
pairs of multiplexer switches (RSW1, RSW2; TSW1, TSW2) of a respective one of
said branches (RX, TX).
- in said receiving mode of said arrangement said secondary band selection
5 signals (BSS1; BSS2) controlling said pairs of multiplexer switches (RSW1,
RSW2; TSW1, TSW2), to which they are inputted, in a way that, in a case, where
a respective one of said secondary band selection signals (BSS1; BSS2) switches
one of said pairs of its associated pairs of multiplexer switches (RSW1, RSW2;
TSW1, TSW2) in a respective one of said branches (RX, TX) into a state for
10 electrically connecting that radio frequency filter (RF1, RF2; TF1, TF2) being
responsible for filtering radio signals of a first frequency band between said pair
of multiplexer switches (RSW1, RSW2; TSW1, TSW2), at least one of the rest of
said secondary band selection signals (BSS2; BSS1) switching said respective
pairs of multiplexer switches (TSW1, TSW2; RSW1, RSW2) of the respective other
15 one of said branches (TX; RX) into a state for electrically connecting the radio
frequency filter (TF1, TF2; RF1, RF2) being responsible for filtering radio signals
of a second frequency band between said multiplexer switches (TSW1, TSW2;
RSW1, RSW2).
- 20 4. Multiband Radio System according to claim 1, **characterized in
that**
- said receiving branch (RX) further comprises a demodulator (RSW) for
downconverting a received RF signal to IF and said transmitting branch (TX)
further comprises a modulator (TSW) for upconverting an IF signal to be trans-
25 mitted to RF.
- either one of said demodulator (RSW) and said modulator (TSW) receives a
carrier signal output from an oscillator (CS) via a receive/transmit switch
(RTSW) which is actuated by a receive/transmit control signal (RTCS).
- 30 5. Multiband Radio System according to claim 1, **character-
ized in that**
- it is a HiperLAN or an IEEE802 system.
- 35 6. Method for operating a multiband radio system comprising a receiving
branch (RX) and a transmitting branch (TX) **characterized by** controlling radio
frequency filters included within said receiving branch (RX) and said transmit-
ting branch (TX), respectively, in receiving mode so that radio signals of a fre-

1 quency band which are passed through in the receiving branch (RX) are blocked
in the transmitting branch (TX).

7. Method according to claim 6 . **characterized by**, in a receiving mode of
5 said multiband radio system, the steps of connecting, in each of said receiving
and transmitting branches (RX, TX), one of at least two radio frequency filters
(RF1, RF2; TF1, TF2) having a stop band function for given frequency bands,
said frequency bands being different from each other, between a respective pair
of at least one pair of multiplexer switches (TSW1, TSW2; RSW1, RSW2) for se-
10 lecting a respective one of said radio frequency filters (RF1, RF2; TF1, TF2).

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